Scientific Programmer Analysts

What They Do

Scientific Programmer Analysts are essential in helping scientists to see relationships and patterns in a vast amount of seemingly dissimilar data, as well as better understanding the structure and function of cells. They write, edit, and maintain computer programs to help these scientific endeavors. Their work entails gathering requirements from scientists, preparing flow charts, developing and writing code, testing and debugging programs, and providing regular maintenance functions. They may also develop software for use in automated test activities. In biotechnology, example program analyses include protein sequence, expression, small molecule, and assays.

Scientific Programmer Analysts employed in biotechnology develop sound clinical study designs, prepare statistical analysis, and review case report forms to ensure proper data collection techniques are followed. They may prepare templates and programming for periodic progress reports, as well as compile clinical data for management review.

They determine system specifications, input and output processes, and hardware and software compatibility. Scientific Programmer Analysts must identify program discrepancies and resolve data problems. They must be able to work with abstract concepts and be accurate while under pressure. Their work requires good communications skills and the ability to work on a team.

*Scientific Programmer Analysts in the biotech industry share characteristics of Computer Systems Analysts. Detailed descriptions of these occupations may be found in the Occupational Information Network (O*NET) at online.onetcenter.org.*

Important skills, knowledge, and abilities include:

- Computers and Electronics – Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
- Mathematics – Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
- Customer and Personal Service – Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- Troubleshooting – Determining causes of operating errors and deciding what to do about it.
- Programming – Writing computer programs for various purposes.
- Reading Comprehension – Understanding written sentences and paragraphs in work related documents.
- Operations Analysis – Analyzing needs and product requirements to create a design.
- Critical Thinking – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- Written Expression – The ability to communicate information and ideas in writing so others will understand.
- Deductive Reasoning – The ability to apply general rules to specific problems to produce answers that make sense.
- Oral Comprehension – The ability to listen to and understand information and ideas presented through spoken words and sentences.

EDD Employment Development Department State of California

LMID Labor Market Information Division "Your Information Source"

Scientific Programmer Analysts

Training/Requirements

- Bachelor's degree in Computer Science, Engineering, or a scientific discipline.
- Possess up to two years of related experience.

What's the California Job Outlook?

While the Bureau of Labor Statistics does not collect data on Scientific Programmers, the occupation listed below is found in the biotechnology industry and has similar duties. The California outlook and wages figures are drawn from all industries and represent an occupation comparable to Scientific Programmer.

Standard Occupational Classification	Estimated Number of Workers 2002	Estimated Number of Workers 2012	Average Annual Openings	2005 Wage Range (per hour)
Computer Systems Analysts				
15-1051	52,800	70,600	2,380	$27.60 to $42.70

These figures do not include self-employment.
***Average annual openings** include new jobs plus openings due to separations.*
Source: www.labormarketinfo.edd.ca.gov, Employment Projections by Occupation and OES Employment & Wages by Occupation, Labor Market Information Division, Employment Development Department.

Additional Sources of Information

Association for Information Systems
(404) 651-0348
www.aisnet.org

Computing Research Association (CRA)
(202) 234-2111
www.cra.org

National Association of Computer Consultant Businesses
(703) 838-2050
www.naccb.org

Occupational Information Network (O*NET)
http://online.onetcenter.org

EDD Employment Development Department State of California
LMID Labor Market Information Division "Your Information Source"